

# 起床战争 - 项目简介

## 1. 项目概述

### 1.1 项目名称

#### FightingZAOBA (起床战争)

这是一款以校园生活为背景的双人合作平台闯关游戏。玩家通过操控两个角色、利用世界旋转机制躲避老师追击、收集卡片并到达出口。

### 1.2 希望带给玩家的体验

- 这是一款休闲娱乐向游戏，玩家可以在一个简单的3D环境里进行探索，体验到不同的环境和元素。
- 可以双人合作进行游戏，锻炼与伙伴之间的默契关系。
- 希望玩家在游玩游戏的过程中体会到解答谜题的乐趣。

## 2. 故事介绍

有一天，瞌睡的你正在早八的课上昏昏沉沉。你和你的朋友正百无聊赖地看着讲台上的老师和周围同样无精打采的同学，突然，眼前一阵天旋地转，你发现你们俩出现在了空无一人的教室里。正在你们四处观察、手足无措之际，头顶传来一阵威严的声音：“孩子，你们选修课必翘、必修课选翘的行为已然触怒了我校的校灵！为了惩罚你们，你们现在已经陷入了我给你们设置的重力反转梦境中，如果你们不能及时逃离梦境，就等着被老师抓到上课睡觉，然后扣掉平时分吧！”语毕，那道声音悠悠远去。你看了看周围，眼神变得坚毅，你的朋友也是……

## 3. 游戏特色与核心玩法

### 3.1 世界旋转机制

游戏的核心创新玩法：**玩家可以旋转整个游戏世界（90度）来改变重力方向**

- 玩家1：按 **q** 顺时针旋转90度，**e** 逆时针旋转90度
- 玩家2：按 **u** 顺时针旋转90度，**o** 逆时针旋转90度

**设计目的：**通过重力方向的改变，解开谜题、躲避障碍、开辟新的前进路径。

## 3.2 双人合作模式

- 双角色控制：
  - 玩家1：移动 A/D，跳跃 Space/W
  - 玩家2：移动 J/L，跳跃 I/小键盘0
- 协作过关：两名玩家必须同时到达出口才能触发关卡切换
- 血量机制：每名玩家初始时有1点血量，血量扣完即死亡
- 死亡惩罚：两名玩家有一名死亡后，关卡重置

## 3.3 学校主题元素

元素	功能描述
老师 (Teacher)	追踪玩家的敌人，会向玩家投掷粉笔攻击
包子 (Baozi)	可收集的道具
校园卡 (SchoolCard)	通关玩家必须收集的游戏物品
尺子 (Ruler)	玩家可以站立的平台
圆规 (Compass)	玩家触碰则死亡，玩家需要躲避
感应灯 (Sensor Light)	当玩家靠近时，开关被触发，感应灯亮起，成为可以跳跃的平台

### 解释说明



#### 玩家1

W：跳跃  
A：向左移动  
D：向右移动  
Q：画面逆时针旋转90°  
E：画面顺时针旋转90°



#### 玩家2

I：跳跃  
J：向左移动  
L：向右移动  
U：画面逆时针旋转90°  
O：画面顺时针旋转90°



#### 圆规

在梦境中，旋转的圆规是致命的，一旦触碰立即死亡



#### 包子

玩家拾取后将恢复5点血量



#### 自动铅笔

当玩家在笔帽上跳跃时，笔尖将伸长，为玩家提供更长的平台



#### 校园卡

玩家只有持有校园卡才能开门通关



#### 教授

教授平时会在改作业，当玩家接近时会向玩家扔出粉笔。若玩家被粉笔砸中，将扣除一点血量



#### 感应灯与开关

当玩家靠近开关时，开关被触发，感应灯亮起。感应灯在亮起时是可以站立的平台，黑暗状态下无法站立

## 3.4 关卡设计

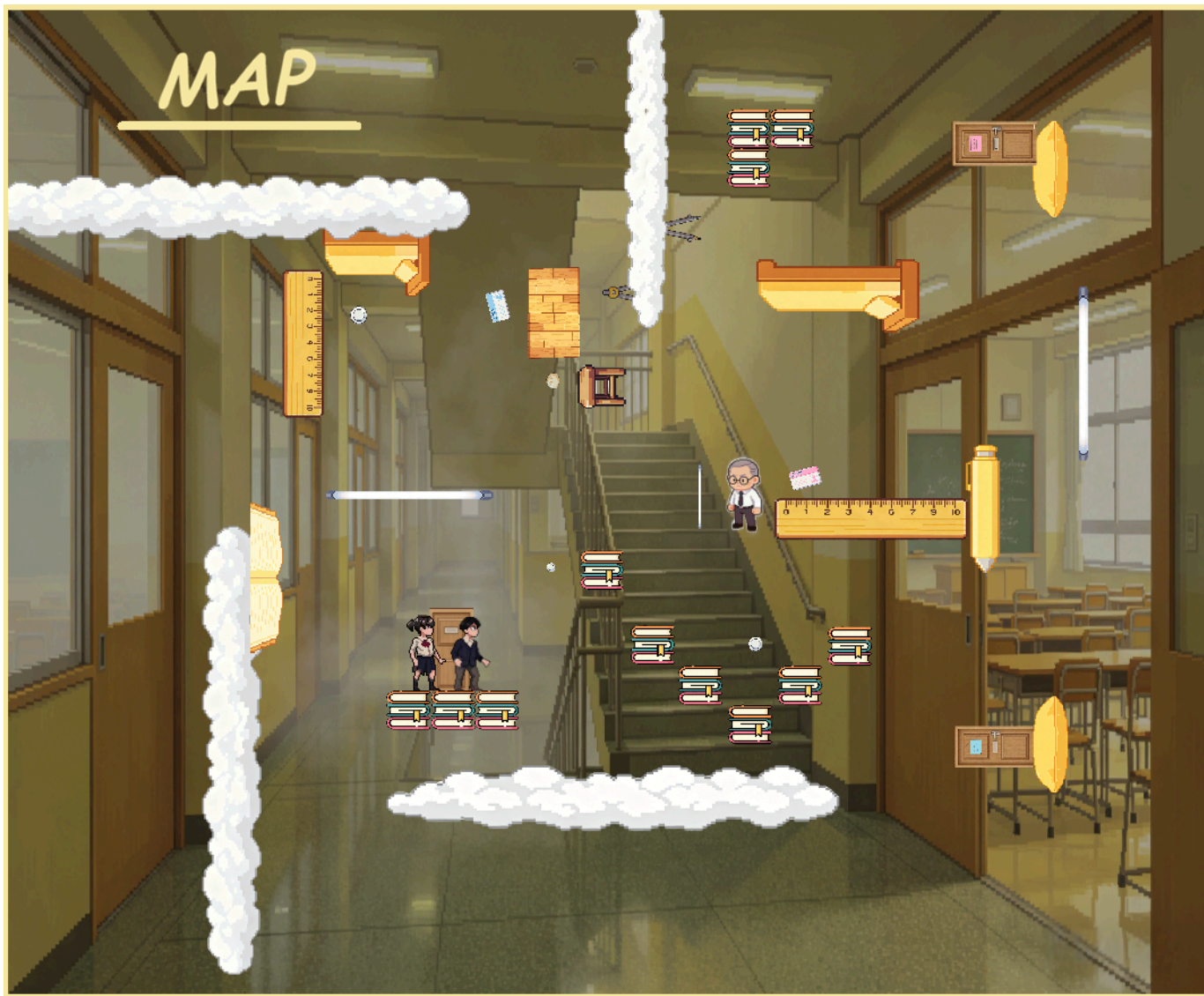
- 教学关卡 (MAP\_Teach): 引导玩家熟悉操作和世界旋转机制



- 关卡一：穿越东花园：仅需少次旋转即可通关



- 关卡三：攀登主E：需多次旋转，规避障碍，才可通关

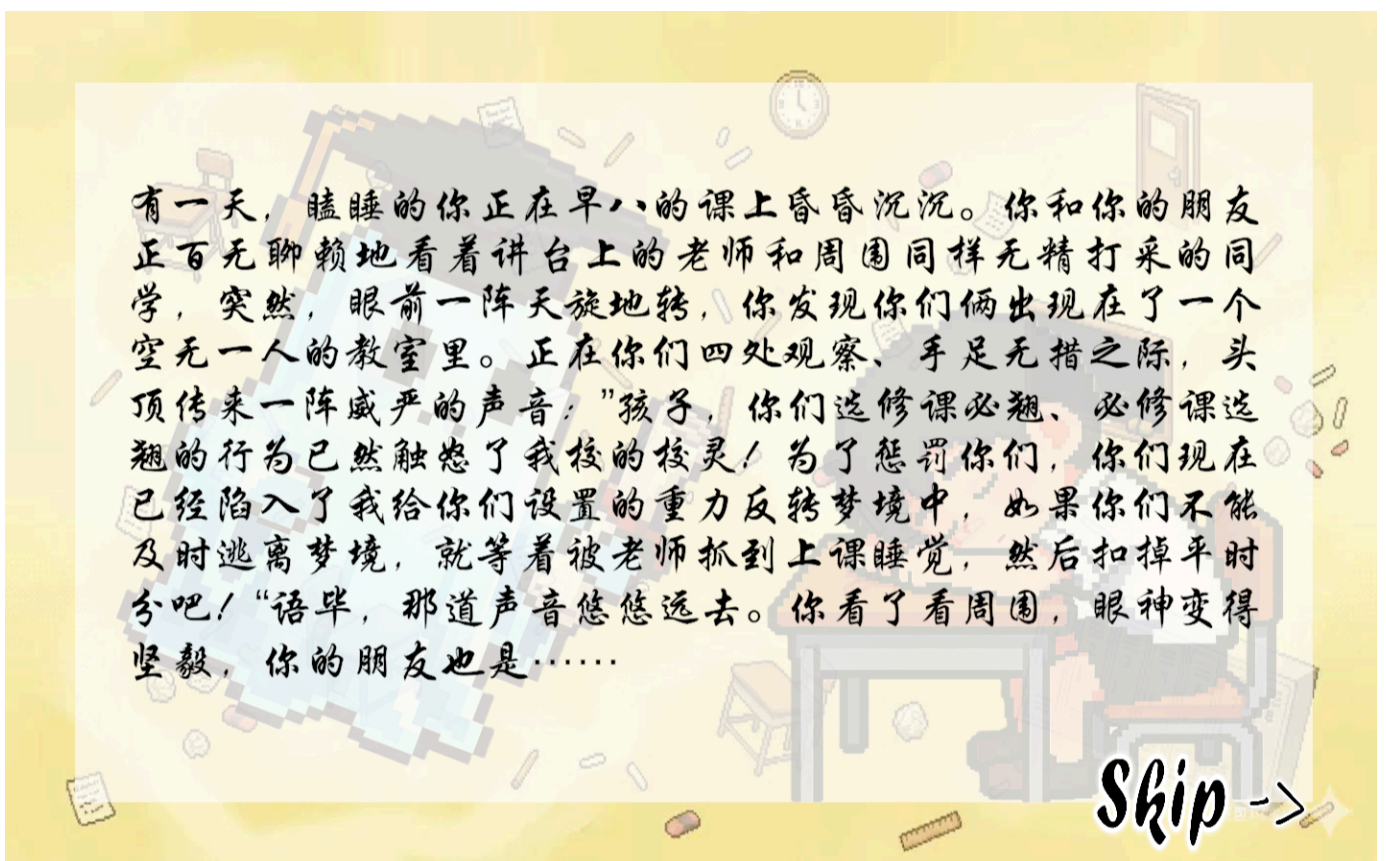


### 3.5 游戏界面设计

- 主界面：玩家登陆游戏时的界面，供玩家进入游戏或者退出游戏。



- **剧情界面：** 玩家点击进入游戏后，以打字机形式弹出剧情，玩家可跳过。



- **菜单界面：** 玩家可在此界面选择关卡。



- **游玩界面：** 游戏界面被平均分割。设定两个相机，分别显示两个玩家的动作。同时玩家可以在此状态退回主界面。



- **游戏暂停界面：** 玩家游玩时可以按下不同按键暂停游戏
  - **小地图：** 按下M键显示小地图



- **游戏物品说明：**按下Y键显示游戏中的关键物品使用方法



- **设置界面：**点击设置图标，会弹出设置界面



## 3.6 游戏音效设计

我们在游戏中安插了丰富的音效。包括：角色死亡音效，角色跳跃音效还有非常可爱的背景音乐！

- 音效：
  - 玩家：跳跃、着陆、旋转
  - 敌人：投掷粉笔、受击、格挡
  - 事件：拾取卡片、通过大门、死亡
- 背景音乐：起床战争背景音乐.mp3

## 3.7 游玩流程



# 4. 技术架构

## 4.1 引擎与工具

- 游戏引擎：Unity3D
- 编程语言：C#

## 4.2 核心系统脚本

### 玩家控制系统 (PlayerController)

- 状态机管理: Grounding、Jumping、Rotating、Falling
- 地面检测: 使用三个检测点的"扎针法"

### 旋转系统 (RotationSystem)

- 管理世界旋转动画
- 处理旋转过程中的碰撞问题
- 注册多个玩家并同步旋转

### 关卡管理系统 (LevelManager)

- 关卡状态跟踪
- 双人集结检测
- 场景切换与过渡
- 死亡与重生逻辑

## 5. 引用与参考

- 游戏玩法受Rotate游戏的启发



- 部分动画来源<https://pixlab24.com/>

- 部分音效来源<https://www.bilibili.com>

## 6. 团队信息

### 开发者

- 邓健豪：关卡设计以及游戏核心玩法的提出
- 匡巍嵩：游戏内所有动画与音效设计
- 陈永豪：游戏内关键道具设计
- 张昊洋：场景旋转与人物控制实现

### 致谢

感谢所有参与项目开发和提供资源支持的团队成员。

# FightingZAOBA - Project Overview

## 1. Project Overview

### 1.1 Project Name

#### FightingZAOBA (Wake Up War)

This is a co-op platformer game set in a school environment. Players control two characters, using the world rotation mechanism to dodge teacher pursuits, collect cards, and reach the exit.

### 1.2 Player Experience Goals

- This is a casual entertainment game where players can explore a simple 3D environment and experience different environments and elements.
- It supports two-player co-op gameplay to build默契 (chemistry/cooperation) with partners.
- We hope players enjoy the puzzle-solving乐趣 (fun/pleasure) during gameplay.

## 2. Story Introduction

One day, you are dozing off in an early morning class. You and your friend are bored, staring at the teacher on the podium and your equally lethargic classmates, when suddenly, the world spins around you and you find yourselves appearing in an empty classroom. As you look around, bewildered and unsure of what to do, a dignified voice echoes from above: "Children, your behavior of skipping all elective courses and choosing to skip required courses has angered our school's guardian spirit! As punishment, you have now fallen into the gravity-reversing dream I have set up for you. If you cannot escape the dream in time, you will be caught sleeping in class by the teacher and lose your participation points!" With that, the voice fades away. You look around, your gaze hardening with determination. Your friend feels the same way...

## 3. Game Features and Core Mechanics

### 3.1 World Rotation Mechanism

The core innovative gameplay: **Players can rotate the entire game world (90 degrees) to change the gravity direction**

- Player 1: Press `q` to rotate 90 degrees clockwise, `e` to rotate 90 degrees counterclockwise
- Player 2: Press `u` to rotate 90 degrees clockwise, `o` to rotate 90 degrees counterclockwise

**Design Purpose:** To solve puzzles, dodge obstacles, and open new paths by changing the direction of gravity.

## 3.2 Two-Player Co-op Mode

- **Dual Character Control:**
  - Player 1: Move `A/D` , Jump `Space/W`
  - Player 2: Move `J/L` , Jump `I/NumPad0`
- **Cooperative Level Completion:** Both players must reach the exit simultaneously to trigger level progression
- **Health System:** Each player starts with 1 health point; death occurs when health is depleted
- **Death Penalty:** The level resets if either player dies

## 3.3 School Theme Elements

Element	Description
<b>Teacher</b>	Enemy that chases players and throws chalk attacks
<b>Baozi (Steamed Bun)</b>	Collectible item
<b>School Card</b>	Required item players must collect to complete the level
<b>Ruler</b>	Platform players can stand on
<b>Compass</b>	Instant death on contact; players must avoid
<b>Sensor Light</b>	When players approach, the switch is triggered, the light turns on, and it becomes a jumpable platform

# 解释说明



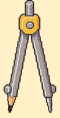
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## 玩家2

I：跳跃  
J：向左移动  
L：向右移动  
U：画面逆时针旋转90°  
O：画面顺时针旋转90°



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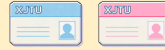
## 包子

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## 3.4 Level Design

- **Tutorial Level (MAP\_Teach):** Guides players through operations and the world rotation mechanism

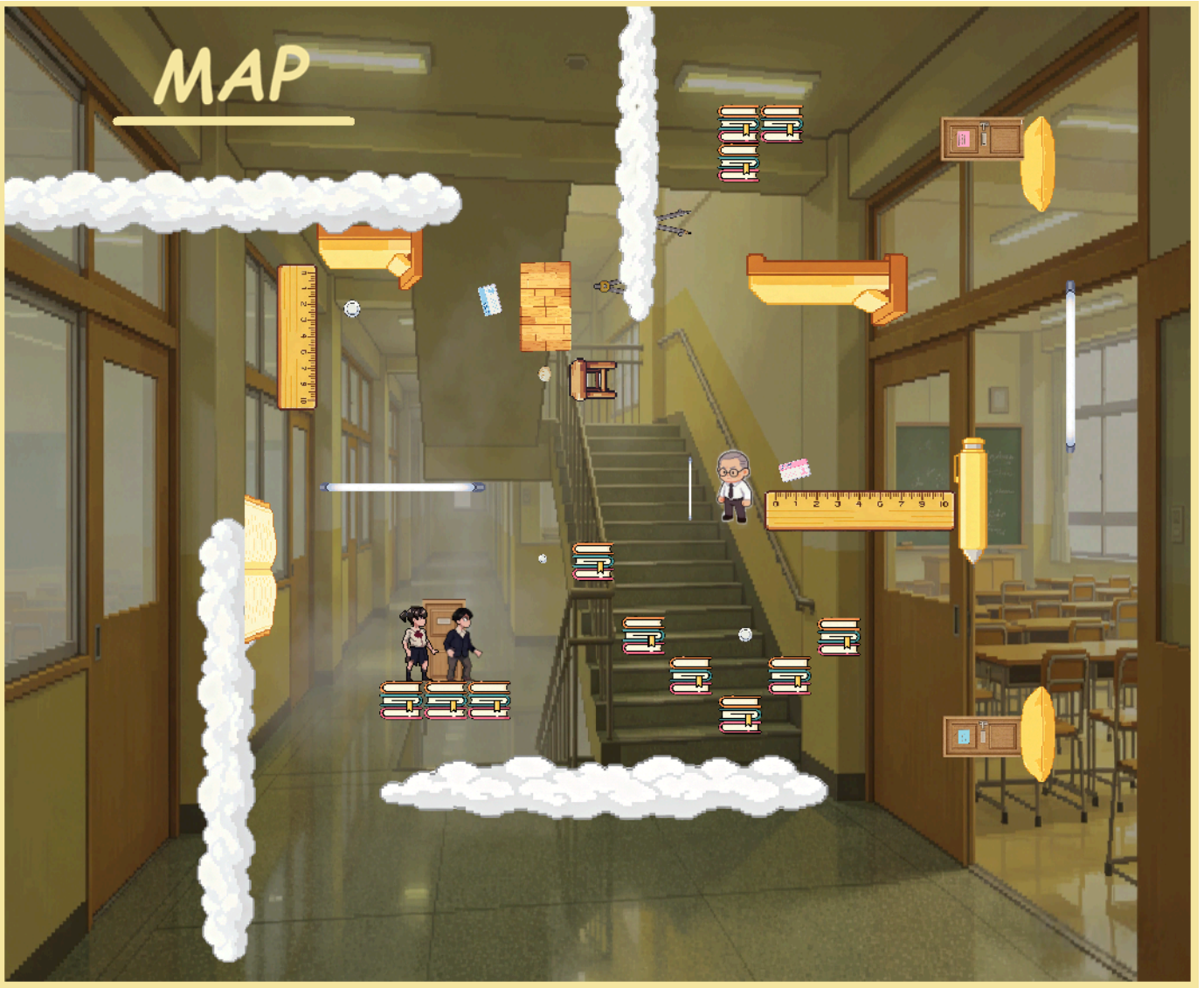




- **Level 2: Lost in the Central Building:** Increased rotation frequency; requires teamwork



- **Level 3: Climbing Main Building E:** Requires multiple rotations and obstacle avoidance

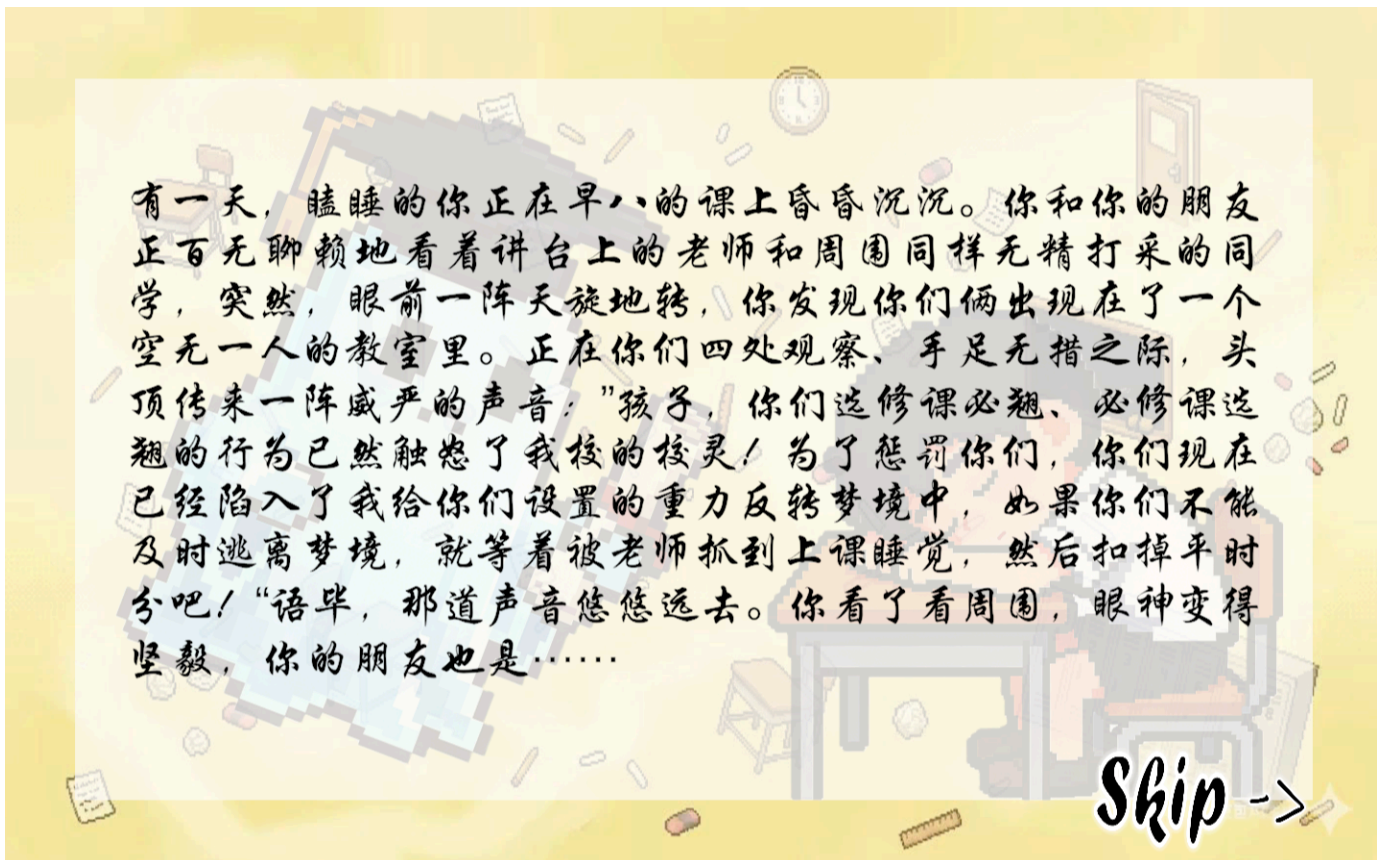


### 3.5 Game Interface Design

- **Main Menu:** The interface players see when launching the game; allows entering or exiting the game.



- **Story Interface:** After clicking to enter the game, the story appears in typewriter format and can be skipped.



- **Menu Interface:** Players can select levels here.



- **Gameplay Interface:** The game screen is equally divided. Two cameras are set up to display each player's actions. Players can also return to the main menu from this state.



- **Game Pause Interface:** Players can pause the game by pressing different keys
  - **Minimap:** Press M to show the minimap



- **Item Description:** Press Y to display how to use key items during gameplay



- **Settings Interface:** Clicking the settings icon opens the settings interface



## 3.6 Game Audio Design

We have rich sound effects throughout the game, including character death sounds, character jump sounds, and a very cute background music!

- **Sound Effects:**
  - Player: Jump, Land, Rotate
  - Enemy: Chalk throw, Hit, Block
  - Events: Card pickup, Door passage, Death
- **Background Music:** 起床战争背景音乐.mp3

## 3.7 Gameplay Flow



# 4. Technical Architecture

## 4.1 Engine and Tools

- **Game Engine:** Unity3D
- **Programming Language:** C#

## 4.2 Core System Scripts

### Player Control System (PlayerController)

- State Machine Management: Grounding, Jumping, Rotating, Falling
- Ground Detection: Uses the "Triple-Point Detection" method with three check points

### Rotation System (RotationSystem)

- Manages world rotation animations
- Handles collision issues during rotation
- Registers multiple players and synchronizes rotation

### Level Management System (LevelManager)

- Level state tracking
- Two-player gathering detection
- Scene transitions
- Death and respawn logic

## 5. References and Credits

- Gameplay inspired by Rotate game



- Some animations from <https://pixlab24.com/>

- Some sound effects from <https://www.bilibili.com>

## 6. Team Information

### Developers

- 邓健豪 (Deng Jianhao): Level design and core gameplay concept
- 匡巍嵩 (Kuang Weishong): All animations and sound design
- 陈永豪 (Chen Yonghao): Key item design
- 张昊洋 (Zhang Haoyang): Scene rotation and character control implementation

### Acknowledgments

Thanks to all team members who participated in the project development and provided resource support.